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# BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,  
ORCHID, GESNERIA AND OTHER PLANT FAMILIES  
AND MANUAL OF THEIR CULTURE

Many Reduced Prices. New Items Listed. Complete Culture Directions.  
A Personal Letter,—to You.

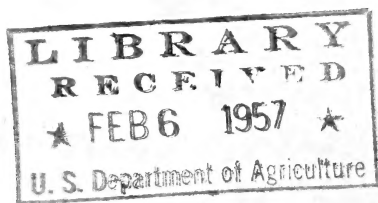
## SPRING 1957



### CECIL HOUDYSHEL

1412 Third St.

La Verne, Calif.



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## INTRODUCTORY LETTER

*Dear Floral Friends:*

We have listed so many new items in this catalog that there is little space for a personal letter to you, but I hope our printer will be able to include this brief message.

First I want to remind you that Adam and Eve were placed in a garden after their creation. God's Wisdom is the same today and a garden is still a good place to be.

Many professional people have the gardening hobby and Doctors lead them all. Many Doctors, some of them noted specialists are on our mailing list.



Cecil Houdyshel

Gardening is good for all ills, spiritual, mental, physical. If you are in perfect health,—it is good for you and will help you to accomplish more and to give more to others. It will help you to live longer.

I've set my mark for 100 years but I would settle for 97.

Since the scientists tell us that longevity is in the genus, (meaning that it is an inherited trait) and having two grandparents, one on either side, who lived to 97, uncles and aunts who lived as long or longer, I may achieve my ambition.

Mere existence is uninteresting. Right thinking invariably points out that normal and happy living requires activity and service to others. One should have the ambition to add something to accrued knowledge, culture, art or invention.

Don't forget that Mrs. Houdyshel rents slides of flower subjects to garden clubs and is also available for lectures in the Los Angeles area. Her fees are reasonable—very little above the actual expense.

The Pomona Valley African Violet Society will hold its fourth annual African Violet Show in the La Verne Recreational Building, April 15, 1957, 1:00 to 9:00 P. M.

Best wishes to all of you for a fine garden, both outside and in the house or hobby greenhouse, in 1957.

*Sincerely,*

CECIL HOUDYSHEL

## TERMS AND INSTRUCTIONS FOR ORDERING

**Prices** in this catalog cancel all former prices. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 4% Sales Tax. Gov. Knight recently raised it from 3%.

**Remit** in advance, in full, by check or M.O. No C.O.D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. Checks and M.O.'s must be payable to Cecil Houdyshel to fit our endorsement stamp. 1, 2 or 3 cent stamps are accepted for small sums—under \$1.00.

**Postal rates** have more than doubled but we still prepay all items unless listed "postage extra," when the order is for \$1.00 or more. If under \$1.00, send 25c extra. If you wish to add a little for postage it will not be refused. When postage extra is required or if sales tax is due and you do not send, we notify you before shipping and charge you 5c for the notice. Thus we both lose. Better to send in the first place.

If you want your order to go **Express Collect** for added safety and protection we include either larger sizes or extras. If by **air mail** we charge the customer only the excess cost above that required by regular parcel post. Estimate this and state you will promptly pay the difference if not enough.

**Insurance** up to \$10.00, 10c. \$10.00 to \$25.00, 15c. Above \$25.00, 20c. Postal insurance covers all except freezing in transit. **Special Handling** costs 15c up to 2 lbs.; 2 to 10 lbs., 20c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 35c. 2 to 10 lbs., 45c. Over 10 lbs., 60c. Each fee is for one package only.

**Wholesale.** We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will quote our best quantity prices.

**Foreign Orders.** If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insects and Pest Act, Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. **Important.** A new Canadian regulation requires a Certificate of Health, from our Inspector, to accompany each shipment. To do this he must make a special inspection of each order. He charges us 50c for this which you must pay. Please add 50c to each order for this purpose. This 50c fee applies also to all foreign orders. Many Latin American Countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your postmaster.

**Partial Shipments** are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting. We must collect from you the fees for Insurance, Special Handling, Special Delivery and all Export fees mentioned above on each partial shipment and on each package of the same shipment if more than one is necessary. Please say that you will pay the difference if you have not sent enough.

**We guarantee** our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. As necessary **culture directions** are in this catalog, we send none with the bulbs and other plants.

**Catalogs.** Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested please refuse catalog or ask P.M. to return at our expense. Current catalogs are free. If an old catalog is wanted, please send a dime for it.

**We ship** safely to all parts of the world.

### General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

**Fertilizer.** We recommend only animal manures, compost and commercial fertilizers that are mostly of organic origin such as **Spoonit**, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use manure (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Little and often is the best rule for fertilizing.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary for their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over-fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use **Spoonit**, which we list under **Garden Supplies**.

**After blooming**, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

**Depth of planting and distance apart** often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as *Daffodils* may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soil than in heavy soils and in cold climates to protect them from frost. A winter mulch will help protect.

**Pests.** Snails, slugs, ants, mealy bugs, thrips, aphids, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled. See our listing of **Insecticides** under **Garden Supplies**.

**Acid and Alkaline Soils.** Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. *Rhododendrons*, *Azaleas*, *Camellias*, *Gardenias*, *Zantedeschias*, *Caladiums* (and other members of *Arum* family), *Nerines*, *Haemanthus*, *Gloxinias*, *Begonias*, *Orchids* and most shade loving plants require an acid soil. Some like *Gladiolus* prefer mildly acid to neutral soils; *Bearded Iris* do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. Some Texas soils are too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

**Chlorosis** of plants, indicated by lighter green streaks of foliage, may not be due to a virus disease, in all cases. It may indicate lack of all required nutrients, some of which cannot go into solution in an alkaline medium. Among such nutrients are Nitrogen

and Iron which are soluble only in acids. Mild acidity is usually best. Iron Chelate in minute quantities often corrects chlorosis. Be careful. It burns if too strong.

**Potting Directions.** Use clean pots of the right size, neither too large nor too small. A 2½" Amaryllis, for example, needs a 6" pot. A 1½" Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimenes may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely. Only sandy soil will answer this purpose. Add enough sand so that it feels very gritty. The potting soil we like best is about 2 parts of peat or leaf mould and 1 of sand. If peat is used a little woods earth or pure rotted leaves and twigs may be added. Plain dirt, especially if clay is present, or any mixture that becomes lumpy when dry is likely to produce poor results. Mulch surface with wet sphagnum to prevent erosion when watering and too rapid drying at surface. Special directions are given for certain plants with the listing.

**Basketing.** Vining or pendant plants like Achimenes, Aeschynanthus and several of the other Gesneriaceae, Begonia Lloydii, Ceropegias, etc. look best and do best in our wire baskets, altho they can be grown in pots, suspended by the "Snap-on" pot hangers. Wire baskets allow perfect drainage and we prefer them also for some orchids like Laelias. We offer the best wire baskets made. Painted wire baskets soon rust out. Ours are galvanized, polished, not soldered but welded.

Place a thick layer of wet sphagnum on bottom and sides of basket. It should be well compressed and at least 1" or 2" thick. For the center one can use a mixture of peat, leaf mould and sand—or any soil formula favorable to the plant. For certain Orchids, Episcias and sometimes other plants, we use only sphagnum thruout.

**Fertilizers** for pots and baskets. The soils recommended above are low in fertility. One cannot add enough to last an entire season. Such an amount would burn the young roots as rapidly as formed. A small quantity of dry, powdered dairy manure is safe but we seldom use it. We prefer to add 1 tablespoonful of bone meal which is slowly soluble and slow acting and a level teaspoonful of blood meal, which is strong and quick in action, to each 6" potful of soil. Too much blood will burn. When plants are in full growth, they may be fed with weak liquid manure, color of weak tea, every three to four weeks. Spoonit supplies a more complete ration, better balanced and more convenient. Use of inorganic forms of nitrogen can have bad results.

**Sources of Further Information.** Always consider the source of your information. Experience is worth more than reading knowledge. Commercial growers usually have had the experience. Please note our **Garden Reference Books**. Join local Garden Clubs. Subscribe for as many Garden Magazines as you have time to read. We especially recommend **The Flower Grower**, Dept. H., Albany, N.Y., **Popular Gardening**, Dept. H, 383 Madison Ave., New York 17, N. Y., **Horticulture**, Dept. H, Boston 15, Mass., **Sunset Magazine**, Menlo Park, Calif., **The Gloxinian**, Elvin McDonald, Gary, Oklahoma.

## GARDEN REFERENCE BOOKS

**Bailey's Cyclopedia of Horticulture.** This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. Price \$52.00.

**Hortus Second** (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains a few culture hints. Price \$12.50.

**Amaryllis and How to Grow Them**, by Peggy Schulz. This book was written for amateurs and by a well known amateur. It contains much useful information. 128 pages, many line drawings, photographs and two colored plates. \$2.95.

**Bulb Magic In Your Window.** 100 bulbs to grow in your window, from Achimenes

to Zephyranthes. 214 pages. 3 color plates and 42 full page illustrations. Complete growing instructions. \$3.95.

**Enjoy Your House Plants.** Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

**The New Greenhouse Gardening for Everyone,** Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. \$4.75.

**How to Grow Rare Greenhouse Plants.** A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

**Geraniums, Pelargoniums,** by Helen Van Pelt Wilson. 248 pages, 7 color plates, many drawings and illustrations. Best book on this subject. \$4.50.

**Gloxinias, and How to Grow Them,** by Peggy Schulz. Illustrated by colored plates and line drawings. Many Gloxinia relatives discussed, 128 pages. \$2.95.

**Growing Plants Under Artificial Lights,** by Peggy Schulz. 146 pages. One color plate and many illustrations. \$3.50.

**Tuberous Begonias,** by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$3.50.

**Brief culture directions for Orchids,** including Cattleyas, Cymbidiums, Cyripediums, and others are given in our 1949 Orchid Price list. All listings in this six page folder are cancelled, prices are much lower now. Price 25c. Our booklet, "How To Grow Orchids" is out of print.

**The Iris 400,** 1949 to 1951 price lists give good culture advice and tell how to get abundant bloom every year. Present Iris prices are lower. We have no recent price list. Six pages. 25c.

**The Complete Book of African Violets,** by Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$3.50.

**How to Grow African Violets,** by Carolyn Rector. 62 pages, paper-board covers. Illustrated. How to grow from seed, prepare potting soils, pollinate and hybridize, control pests, diseases, groom plants for show and grow from leaf cuttings. \$1.50.

**A to Z On Fuchsias.** 136 pages. Cloth bound. Illustrations, some in color. 700 varieties described. \$3.25. Supplement to bring your book up to date, 25c.

### Garden Supplies

**Postage Extra** is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. Here is how to find it. We are very near Los Angeles. Call your P.O. and ask the cost of postage on the packed weight given from your P.O. to Los Angeles and send us that amount. If you do not send the postage in full with order (sales tax too if in Calif.), we write and ask for it before shipping. This delays your order and makes extra expense for us.

If your shipment goes by express, no postage is due. But the minimum cost of an express package is now \$1.85, any weight, any distance.

**Snail-Kil Pellets.** 1 lb., 45c, plus postage for 2 lbs. Two pounds, 75c, plus postage for 3 lbs.

**Thrip O cide.** Contains DDT. Kills thrips on Gladiolus or other plants. Scale on Orchids. 2 oz. 65c prepaid.

**Vio-Vim,** a fungicide and bactericide for African Violets. 75c prepaid. Its effect is apparent in the stimulated growth of the plant.

**Isotox.** Improved Isotox Garden Spray M. For African Violets use 1 teaspoon to one gallon of water. Mix well. \$1.00 for 4 oz. bottle. By mail add 20c for postage and packing, plus 4c Sales Tax in Calif. Wonder Garden Spray, \$1.10, post paid, plus 4c tax in Calif.

We assume no risk for results with insecticides. Read instructions carefully.



**Spoonit** is the fertilizer we use on African Violets and on all house plants. A new, improved formula is now available. **Analysis:** nitrogen, 18%; phosphoric acid, 20%; potash, 17%. To use, dissolve level tablespoonful in 1 gal. water or level teaspoonful in 1 qt. Give Transplants half strength. Apply every 3 or 4 weeks. It never burns. **Prices:** 6 oz. package 60c plus 8c postage. 15 oz. pkg., \$1.25, plus postage on 1 lb. (See paragraph 1 above.) 2½ lb. pkg., \$2.50 plus postage on 3 lbs. Sometime during the spring season Spoonit will be sent out in the form of easily dissolved pellets instead of powder.

**Black Magic, African Violet Mix.** The users praise it. 8 oz., price 49c. Plus 10c postage. Dampen before using.

**Horticultural Peat.** High quality. 3 lbs., 50c, f.o.b. Send postage for 4 lbs.

**Sphagnum Moss.** Best we can get. 70c per lb. gross weight. Postage extra, for 1 lb.

**Plant Labels.** The following are plastic labels, easily written upon with pencil. **Pot Labels,** length 4½", 35c doz. Length 3½", 30c doz. Small labels for African Violets, 2" long, 25c doz. **Orchid Labels.** Perforated on one end, but without wire or cord, 2½", 30c doz. **Aluminum Tree Labels.** Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent, with wire to tie on, 35c doz. Package of 50, \$1.00. On orders under \$1.00, send 25c extra.

**Wire Baskets.** Our wire baskets are electrically welded, galvanized, non-rusting. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price, with hangers, 8", \$1.00 ea., \$11/doz. 10", \$1.25 ea., \$13.50/doz. 16", \$2.75 ea., \$25.00/doz., postpaid.

**Snap On Pot Hangers,** for hanging any size pot. Galvanized. 50c ea., \$5.00/doz. Three or more, postpaid. On less, send 10c ea. for postage.

**Baffle Spray Fogger.** For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c.

**Hose End Fogger.** Coarse or fine spray. Useful for spraying orchids, tub. begonias, etc., and for damping greenhouse to increase humidity or as a moveable fogger. \$1.74. Postage, 10c extra.

**Rootone.** Dust seed, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. ½ oz. 50c postpaid. 1 lb. can, \$5.00, plus postage for 2 lbs.

**Vitamin B-1,** 100 tablets. 75c.

**Directions for use,** applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

## CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the species (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full.

### THE AMARYLLIS FAMILY—Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru Zephyranthes.

**The American Plant Life Society** was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening of interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U.S. Dept. of Agriculture, (now retired) the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present increased costs these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.00 per year, which you may send to Thomas W. Whitaker, Executive Secy., Box 150, La Jolla, Calif. Subscribe before Dec. 31 for 1957 edition.

The Society also publishes the following book, bound in Manila paper.

**Amaryllidaceae: Tribe Amarylleae**, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888. Order from Mr. Whitaker.

**Agapanthus**, Blue Lily of the Nile. They flower here in June to Aug. In the north they must be grown in large pots or tubs and wintered in a frost free room. Plant in full sun exposure in any good sandy garden soil that drains well.

**Agapanthus longispatus**. Similar to well known *A. orientalis*, but smaller and earlier to flower. Profuse bloomer. For pot growing. 50c, 3 for \$1.25.

**A. orientalis**. Dark Blue. Larger than longispatus. Superior clone, \$1.50.

**A. orientalis**. Sky Blue. 75c.

**A. orientalis alba**. Pure White. \$2.00.

**A. von Weillighi hybrids**. Selected clone. A giant type, very large, round umbel of blue flowers on a tall stem. Late flowering, extending the season. \$2.50.

**Amarcrinum Howardi**. Bigeneric hybrid of *Brunsvigia rosea* and *Crinum moorei*. Beautiful, fragrant, pure pink fls. Fall bloomer. Culture like *Crinums*. Hardy to So. Indiana. Large bulbs, \$3.00.

**A. Dorothy Hannibal**, a *Les Hannibal* origination. A new introduction. Like *Crinum Cecil Houdyshel* it flowers in all seasons. The flowers are a very pretty pink. Price. \$10.00.

**Amaryllis** are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

**How to Grow Amaryllis**. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they may be planted deeper in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids." Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough. The most common error is lack of sufficient moisture. They are endemic to the tropics and in many cases, where there is almost daily rain. The soil should contain much humus. Add well rotted manure and if not slightly acid, add some peat but do not acidify the soil with sulphur or aluminum sulphate. We do not advise planting imported, greenhouse grown bulbs in the outside garden. They seldom do well outside.

**In Pots**. A 2½" bulb requires a 6" pot. Give a 3" to 3½" bulb a 7" pot. Remove dead roots but every vestige of living root should be left on. Our best success in flowering Amaryllis and in growing them on to larger, better bulbs is in a soil mixture composed of clean, sharp sand one part by volume and a mixture of pure organic material two or three parts. The latter may be pure peat or about half peat and half well broken up or decayed leaf mould, woods earth or completely reduced compost. The final mixture should have enough sand to feel very gritty. Such a mixture drains quickly but retains enough moisture around the roots.

To this mixture we add a tablespoon of bone meal and a level teaspoon of blood meal for each 6" pot. This is enough fertilizer until after bulbs have flowered.

One curved piece of pot over pot hole is sufficient for good drainage. Cover this with a layer of wet sphagnum. Set bulb in soil and mulch top surface with a layer of



wet sphagnum. The neck and about  $\frac{1}{2}$  of bulb should be above soil surface. This surface should be  $\frac{1}{2}$ " below pot rim. In potting carefully spread out all living roots as they are a great advantage to bulbs. Such bulbs will start more quickly and may be given a warm temperature at once. If there are a few or no living roots on bulbs, set them first in a cool place, about 50°, for roots to form and growth start.

We water at once and again when growth has started. With mixture above advised, one is not likely to over water tho you should be a little careful at first, if the bulb had no living roots. For as long as they will grow, potted Amaryllis need frequent watering. They are not only heavy drinkers but gross feeders. If you give liquid manure or Spoonit every 3 weeks, it will be about right. It is also good to vary the diet.

Amaryllis like the sun. If the foliage fades the sun may be too strong or you may not be watering enough. In mid summer in our greenhouses we usually have to apply a little shading to the glass, partly on account of temperatures which may go to over 100° even in our air conditioned houses. Whitewash shading can be washed off when cooler weather arrives. In the house, give them a sunny window. Keep the bulbs growing vigorously until fall, Oct. or Nov. When outer leaves begin to go down, buds have been formed for next season's flowers and bulbs may be dried off and stored in a cool place. Inspect frequently. For early flowers, dry off about Nov. 1, or earlier.

This describes the method we used.  $2\frac{1}{2}$ " to  $3\frac{1}{4}$ " bulbs potted from Dec. to about Mar. increased in size. A few burst their 7" pots. Some became fully 5" in diam.

**A. ambigua.** Lily shaped, white flowers with pink markings, on tall straight stems. 5 to 7 flowers in an umbel. The exquisite spicy fragrance perfumes the entire garden. Plant 4" deep in garden in south, to Okla. Believed to be a natural hybrid of *A. elegans* and *A. vittata*. \$2.50.

**A. psittacina.** The parrot colored Amaryllis as the name indicates. It comes from S. Brazil and blooms in winter here. The frost usually ruins many of the flowers. The green tinted flowers with carmine lines and edges are very attractive and unusual. The bulb is very large and long necked. This species is hard to get and we have few. Price \$9.00. It does well in pots.

**Hybrid Amaryllis.** The Howard and Smith strain is considered to be the best American strain. These are grown from seed produced by moving selected field grown bulbs to greenhouses. There they are hand pollinated with each other and with a large stock of Dutch varieties. The resulting seedlings are field grown to flowering sizes. In the field, weak varieties perish. The surviving bulbs are thus far easier to grow outside in the south than imported, greenhouse grown bulbs.

**Assorted Colors.** These include White Backgrounds, various shades and markings of red, pink, scarlet, rose, etc. 2" bulbs usually flower. **Prices.** 2"- $2\frac{1}{2}$ ", 60c, 3/\$1.75.  $2\frac{1}{2}$ " to 3" diam., 90c ea. 3/\$2.50. 6/\$4.75. 12/\$9.25.

**Hardy Hybrids.** These are not hardy outdoors in the colder states but as far north as North Carolina, Washington, D.C., and Oklahoma these have proven winter hardy if covered by 4" of soil and given a good winter mulch of straw.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors will be most welcome.  $2\frac{1}{2}$ " price 75c ea. \$7.00/doz. \$50.00/100.

**Dutch Hybrids.** The most perfect of all Amaryllis, in form, coloring and size of flowers are the Royal Dutch or Warmenhoven strain and the Ludwig strain. These we import from Holland. They represent the highest development of the Leopoldi hybrids, having more nearly flat flowers and shorter trumpets. The colors also have been developed into the most exquisite shades.

**Important.** Dutch Amaryllis usually arrive in late Nov. to early Dec. We pack them in a large bag of peat for insulation. We have never yet had one frozen. Since peat is needed in your potting soil we add a tablespoonful of bone meal. If you add an equal volume of well rotted leaf mould and the same of sharp sand you have enough potting soil for a 7" pot.

**Dutch Bulb Sizes.** We order only top sizes, 28 cm. circumference, at least 3¼" diam. We guarantee safe arrival of true to name bulbs.

**Ratings.** Many of the following varieties have been tested at Valleevue Test Gardens, Cleveland, O. Known ratings are given. The highest rating is AA. Dutch growers have reduced prices and we therefore lower ours.

**Royal Dutch or Warmenhoven strain:**

**Bordeaux.** A. Bordeaux or deep wine red. \$5.25.

**Lucifer.** The darkest red, fine contour and large size. A gorgeous flower. \$6.50.

**Moreno.** AA. 8" fls. Unusual color, light wine red, tinted rose in throat. \$5.75.

**Queen's Page.** AA. Fls. over 8", delicate salmon color. Very wide round petals and a perfect contour. \$5.75.

**Red Master.** AA. This variety is in greater demand than any other. Very dark Bordeaux red of immense size, 10" diam. Order early. Last year we sold out before bulbs arrived. \$7.00.

**Salmonetta.** A. Bright salmon-pink, shaded orange in throat. 8" flowers. \$5.75.

**Sweet Seventeen.** B. 9" fls., salmon-rose pink. A favorite. \$6.25.

**Violetta.** Violet tinted rose. Unusual color, large fls. \$5.25.

**Ludwig Amaryllis.**

**American Express.** AA. 8½" fls., rich orient red. Easy to grow and flower. \$6.50.

**Bouquet.** A. 8½" fls., begonia pink shading to rose in throat. A very beautiful flower. \$9.00. Tom Manley said, "The best Amaryllis I have ever seen."

**Doris Lillian.** A. 7½" fls. of deep carmine rose. Perfect contour. A beauty. \$8.00.

**Ludwig's Dazzler.** 8½" fls. of pure dazzling white. Round and perfect in contour and form. \$7.50.

**Marie Goretti.** 8" white fls. with slightly fringed petals. A large stock permits a low price. \$6.00.

**Miss Margaret Truman.** AA. 8" fls. of porcelain rose or rose pink of great beauty. \$8.00.

**Pink Favorite.** 9" fls. of camellia rose pink. Ludwigs seem to consider this and the following the best two pinks and most experts agree. \$8.50.

**Pink Perfection.** A. 8" fls., rose opal pink. Perfect in shape or contour. One of the world's most beautiful amaryllis. \$9.00.

**Roselinde.** 7" nicely rounded fls. of carmine rose pink, lighter in throat. This is a very good pink at a low price. \$5.50.

**Snow Queen.** B. 7½" pure snow white fls., with minutely waved edges which add to its very refined appearance. \$5.50.

**White Giant.** 8" pure white fls.; a magnificent Amaryllis. \$6.00.

**Wyndham Hayward.** AA. 9" fls. of dark orient red. Fine contour. One of the nearest perfect. Named in honor of Wyndham Hayward. \$8.00.

**Special Offers of Dutch Amaryllis.** Any three varieties of Dutch Amaryllis for 5% discount. On a \$75.00 order or over, 10% discount. All 20 varieties, the world's best 20, listing for \$135.00, for \$115.00.

We have other varieties of Dutch Amaryllis in small quantity. Price, our selection only, labelled with name, \$4.00. A few, equally good, are accidentally unlabelled. Price \$3.50. The bulbs in these, two lots are not subject to any quantity discounts.

We fill orders for Dutch Amaryllis usually as late as April, but you should order early as potting is preferable, but better late than never. Sometimes we sell out some sorts by April 1. Late orders should name substitutes or give us instructions to select substitutes.

On April 1, we pot leftover bulbs and sell local customers in this Los Angeles area. For a time we can remove from pots and ship. Please order as early as possible.

**Amaryllis Seed** will cost you less if you buy the bulbs and grow your own. Be sure to pollinate the flowers. When the 3-parted stigma opens the ripe powdery pollen may be applied. When pods split they may be gathered, dried for a few days and seed planted in soil similar to that used in potting bulbs. Plant  $\frac{1}{2}$ " deep and finish off with a thin layer of wet sphagnum. Or they can be grown in pure sphagnum, well broken up by rubbing or pounding. When crowded, transplant. If kept growing continuously, they should flower in about 3 years, or less. We do not sell seed.

**Clivias** have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The orange flowers are produced in umbels of 10 to 25 in March and April.

**Culture.** They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced  $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 6" to 8" for small plants and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil as described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

**Clivia miniata.** Wide open soft yellow orange fls. \$1.00, \$2.00. Flowering size \$2.75.

**C. cyrtanthiflora.** The flowers are tubular and long, yet they are so numerous that they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price, \$15.00.

**C. European Hybrids.** We formerly listed these as **Nobilis hybrids**. Evidently the species *Nobilis* is not an ancestor and we acknowledge our error. The large flowers have well rounded petals of red-orange and the wide leaves are ornamental. This is the most desirable of all Clivias. Selected fine large plants, blooming size, \$6.50.

Most **Crinums** are large bulbs and plants tho a few are no larger than an Amaryllis. They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they are indispensable.

The lovely lily-shaped flowers are useful to florists especially those who must grow most of their own flowers. They are particularly nice in a wreath.

**Culture.** *C. bulbisperrum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, *Cecil Houdyshel* and *Powellii Alba* are equally hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing *Crinums*. If your *Crinum* foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to the soil will lower the pH and probably cure the plants.

*Crinums* succeed in large pots or tubs but most of them require much space for house or greenhouse growing. Tub can be stored over winter and set outside in summer. In

the south the bulbs may be planted very shallow. Keep always wet when growing.

**Crinum bulbispermum.** We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, alba, and offer only the pink, rosea. 50c. Good blooming size, \$1.00.

**C. campanulatum.** Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00. Very large, \$1.50.

**C. Cecil Houdyshel.** Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as C. Powellii. Instead of flowering only once, like Powellii, this hybrid has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall. It is hardy as far north as Independence, Mo. If planted 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero. Ralph Waldo Emerson, of Brooklyn, L. I., reports that his bulb has survived two winters and flowered two seasons. Spring is the best time to plant Crinums in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

Prices reduced. Blooming size, \$1.50. Large, \$2.00. Jumbo bulbs, \$3.00 and \$4.00 each. The jumbos are very large and require a lot of postage. They increase very rapidly and a jumbo size soon makes a large clump.

**C. Ellen Bousanquet.** Large, glowing, dark wine red flowers. A very beautiful crinum. \$1.00 and \$1.50.

**C. Elizabeth Traub.** We are introducing this new crinum, the origination of Dr. Hamilton P. Traub. It was obtained by crossing C. scabrum and C. Ellen Bousanquet. The flower color differs a little from the latter and the plant is much more sturdy. It makes offsets more freely. The culture is much easier. Those interested in Crinum breeding should try crossing this on C. Cecil Houdyshel. The latter makes a few seed and it can be done. We can not spare more than 5 bulbs, order early if wanted. Price \$10.00.

**C. Erubescens.** Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

**C. H. J. Elwes.** Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

**C. latifolium.** This species is usually known in horticulture as C. yemense. The pure white flowers are very large and attractive and fittingly adorn an unusually attractive plant in June to July. Large bulbs, \$3.00. Blooming size, \$2.50.

**C. Louis Bousanquet.** Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. 75c and \$1.50. Jumbo \$2.50 to \$4.00.

**C. Moorei.** Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves gives the plant great decorative value. Requires shade. Nearly as hardy as bulbispermum. \$1.00 and \$1.50.

**C. Peach Blow.** Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. \$6.50. Probably tender.

**C. Powellii alba.** Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

**Cyrtanthus Henryae, Richard Warrill.** A fine hybrid by Mrs. Henry. Everblooming, salmon red. Soil and culture like Amaryllis but no dormant season. Very rare. \$5.00

**Elisena longipetla.** Very rare and lovely Peruvian amaryllid. It is related to the Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. It may be crossed with Ismene. \$2.00.

**Eucharis amazonica** (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on banks of Rio Magdalena, Colombia, S.A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

**Culture.** For pots only. We grow in 5" pots and shift to larger when too full, but crowding encourages bloom. We use exactly the same soil as for Amaryllis, including a tablespoonful of bone meal to a pot. Because they need abundance of water when growing

vigorously and blooming, the drainage must be perfect. They are shade plants but need strong light and some sun, when growing well, to develop flowers. Keep them well fertilized with liquid fertilizer. We use Spoonit. As growing plants, in foliage, they may be transplanted and go right on growing, this is the better way. Dry bulbs start very slowly and this method will save you much time. When received, pot at once and give full shade for a week, then gradually give a little more light and finally more sun. Keep them growing vigorously for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. Or you may not have given them enough sun. Experienced growers get as many as four crops of flowers in a year. Eucharis are tropical plants and 65° is the best minimum night temperature. Our bulbs were over 2" diam. when potted. Growth of foliage reduces this a little. Price, out of pot, postpaid, \$3.00 or f.o.b. in pots by express, \$2.50. Delivery by mail only in warm weather.

**Habranthus** bloom several times a year and at most any time. Culture like Amaryllis. After good growth, if allowed to get rather dry for a period they will usually flower after a good watering. Umbels have but one flower. **H. brachyandrus**, lavender purple fls., 75c. **H. robustus**, pink lavender, 60c.

**Haemanthus**. The Blood Lilies of South Africa. So rare that few have seen them.

**Culture**. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be as for Amaryllis. They should have about half sun exposure. Pot with bulb only lightly covered.

Haemanthus produces red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this frequently as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf. Species are easily crossed to produce hybrids if anthers of mother plant are removed before ripening of pollen. Store pollen in advance in small stoppered glass phials, in refrigerator at 45°.

**H. coccineus**. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers come in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Flowering sizes, \$2.00 and \$3.00. Extra large, that should give two scapes, \$4.00.

Order now and we can deliver about June or July.

**H. carneus**. A small species that is winter growing like coccineus. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem, in July. Two short, prostrate leaves follow the flowers. \$2.50. Delivery, late spring when dormant, but not after July 1.

**H. Katherinae** has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 7" to 9" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited. Price \$5.00. Largest size, \$7.50.

**H. multiflorus**. In general appearance, it resembles Katherinae. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has been sold by florists for \$25.00 when flowering. Try crossing it with Katherinae. Blooming size, \$5.00. Largest bulbs, \$7.50.

We ship *H. Katherinae* and *H. multiflorus* as soon as safe to mail. *H. multiflorus* is often not dormant until about Mar. 1.

**Hemerocallis. Daylily.** The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced thru a long period that "beautiful every day" would be more apt, as a collection of several sorts shows masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

**Culture.** While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

**Hemerocallis Araby.** 30". E. (evergreen). A lovely, pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

**H. Calypso.** Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

**H. Cecil Houdyshel.** E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

**H. Chengtu.** E. Brilliant coppery orange-red with carmine mid-zone. 36". July-Sept. 50c.

**H. Cinnabar.** E. Cinnamon, sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

**H. Crown Prince.** E. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

**H. Dauntless.** E. Cadmium yellow. Fulvous red blended in mid-zones. Pastel effect. 30". June-Aug. 75c.

**H. E. A. Bowles.** 48". Large ruffled flowers of deep red-orange blended with gold. Early. 50c.

**H. Evangeline.** 40". Large, rosy flowers with purple eye zone. Early. 75c.

**H. Florham.** E. Still popular old hybrid. Large, golden yellow. May-July. 50c.

**H. Florida.** Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

**H. Iris Perry.** E. 36". July-Sept. Orange-bronze. 50c.

**H. Kwanso.** The Double Orange Daylily. 25c ea. 3 for 50c.

**H. Linda.** E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

**H. Mandarin.** E. 48". Lemon yellow. June-July. 50c.

**H. Margaret Perry.** E. Brilliant orange-scarlet. 4 ft. July-August. 35c.

**H. Modesty.** 36". Large, pale, creamy yellow. Our nearest white. 50c.

**H. Nubiana.** E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 50c.

**H. Patricia.** 30". Pale yellow, large fragrant flowers. July-Aug. 50c.

**H. Radiant.** 42". Rich orange. June-July. 50c.

**H. Rosalind.** Famous pink Daylily. Pastel pink. \$1.50.

**H. Rajah.** 40". Deep English red, veined darker. Garnet red eye-zone. July-Aug. 50c.

**H. Rosita.** E. 36". Near Carmine, tinted copper. Part shade best. \$1.00.

**H. Royal.** E. 40". Beautiful golden yellow. Fine texture. July. 75c.

**H. Royal Ruby.** All agree it is the finest red, to date. 40". July-Aug. \$2.50.



**H. Serenade.** 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.

**H. Sibyl.** E. Dark red-purple petals, lighter sepals. \$2.00.

**H. Soudan.** 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.

**H. Vesta.** 30". Deep orange with glistening gold sheen. May-July. 50c.

**H. Vulcan.** E. 30". Darkest maroon red. July-Aug. 50c.

**H. Wau Bun.** Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.

**Complete Collection.** The entire list of 32 varieties are priced singly for \$23.40. They will be labelled with permanent aluminum garden labels, an added value, for \$21.75 postpaid. If by express, f.o.b., we will send larger divisions.

**Ismene.** Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

**Culture.** They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismenes can also be grown in pots. See also their close relative, Elisena.

**Ismene calathina.** Type variety. 35c.

**I. festalis.** An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. The true variety, \$2.75.

**I. Sulphur Queen.** Hybrid of *I. calathina* and *I. Amancaes*. Light yellow. Very rare, beautiful and most desirable. \$1.00. Large \$1.50.

**I. macleana.** A very tiny Ismene on long stems. Probably the hardiest. 75c.

**I. Olympia.** The giant among Ismenes and it is magnificent. The huge flowers are tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$3.00, for blooming size.

**I. Advance.** Improved form of *Calathina*. \$1.00.

**Ismene Collection.** One bulb of each, 6 varieties, \$8.25.

**Sprekelia formosissima. Jacobean Lily. Orchid Amaryllis. Aztec Lily. Type variety.** A well known, half hardy Amaryllid. Can be grown in pots or in the garden. In the far north, it can be dug and stored in the fall like *Gladiolus*. Bright scarlet, large flowers, somewhat orchid like in form. Seedlings vary in color. 75c.

**S. formosissima superba.** A larger form. 75c ea.

**Tulbaghia violaceae.** Small cousin to *Agapanthus*. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz. Delivery all year.

**T. fragrans.** This much larger species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$1.00. Delivery all year.

**Zephyranthes.** Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

**Zephyranthes candida.** Pure white, evergreen. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz.

**Z. grandiflora.** The largest *Zephyranthes*. In the south its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 20c. Per doz. \$1.75.

**Z. rosea.** Small, but very lovely deep pink flowers. Fine in pots, about 8 in a 5" pot. 20c ea. 8 for \$1.50.

The *Alliae*, or Onions, are now classed in *Amaryllidaceae*. The following are ornamental and useful for seasoning salads, soups or meats.

**Allium schoenoprasum.** True Chives. Small clumps. 15c.

**A. tuberosum.** Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c. (Try wintering in a pot.)

## IRIS FAMILY—Iridaceae

The Iris is the type genus of this family. Bearded Iris and *Gladiolus* are the outstanding members. Maricas are lovely and curious house plants, truly "out of the ordinary."

**Tall Bearded Iris.** No garden is complete without Bearded Iris. Our small "Iris 400, Price List" includes only aristocrats. It includes complete culture information, and tells you how to get a profusion of flowers every year, not every other year. Price 10c. **Special Offer.** If you do not care for names, we offer surplus rhizomes from this lot, 20 to 30 var., no labels, 100 for \$10.00, f.o.b. express. If by mail, send postage for 12 lbs., you will get larger plants by express. Orders will also be filled from the price list.

**Collection** of 10 fine varieties, our selection, from the "Iris 400" list, \$2.50. 20 varieties, labelled, \$4.50.

If you are in the Los Angeles area, come and see our Iris about Mar. and April. Select your own and take them home.

## GLADIOLUS

**How to Grow Gladiolus.** Glads planted Jan. 1 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the east) are reasonably sure to escape the attack of thrips.

**Thrips** are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster and Chlordane can be bought from most local feed or seed stores. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants, cut worms, wire worms, etc.

Dust *Gladiolus* 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

If you cannot get it locally we can supply 1 lb. package for \$1.00, postpaid. If in an express shipment price 60c. This Chlordane Kil Dust 5 kills nearly all pests.

Many will prefer to spray instead of dusting. For spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.20 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good *Gladiolus*. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

**Sizes.** Size No. 1, 1½" up. No. 2, 1¼" to 1½". No. 3, 1" to 1¼". No. 4, ¾" to 1". No. 5, ½" to ¾". No. 6, all under ½". In the following list L. means large, No. 1 or 2; M. means medium, No. 3 or 4; S. or small are No. 5 or 6. Smallest sizes bloom and often bulblets. Nos. 2 and 3 are preferred for growing commercial cut flowers.

**Prices** are for one bulb. Multiply by 10 for price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen.

Our bulbs are grown in rich soil, on the heavy side. They are not always as nice looking as bulbs grown in the thinner sandy soil. They often perform better and we guarantee them to grow well. They are priced lower than usual prices. We believe we have enough of all but it's wise to name substitutes.

**Bridesmaid.** Color, peaches and cream. L. 8c.

- Burma.** Deeply ruffled, dark rose red. Opens 7 fls. at one time. Jumbo bulbs, 12c. L. 8c.
- Capeheart.** Early salmon rose. A favored florists pink. No. 1 and jumbo, 10c. L. 6c. M. 4c.
- Chamouny.** Beautiful bright rose with silver edge. L. 6c.
- Debonaire.** Tall, early pink. Jumbo, 8c. L. 5c. M. 4c.
- Ethel Cave Cole.** Favorite, best florists pink. Very large fls., many open. Jumbo 10c. No. 1, 8c. L. 6c. M. 5c. Bulblets \$1.00/100. For Decoration Day flowers, plant jumbos.
- H. B. Pitts.** Very fine large orange pink. Fine for cutting. Jumbo, 10c. L. 7c.
- June Bells.** Earliest white. Tall, with large very beautiful ruffled fls. Jumbo, 12c. L. 10c.
- Los Angeles.** Sm. grenadine pink fls. Long ago a favorite of cut flower market, now valued for landscape use as one bulb has produced as many as 100 flowers. 7c.
- Mauve.** Our recent introduction of this unusual color. Jumbo, 12c. L. 8c.
- Pinocchio.** Most unusual color, blending to pink, yellow, green, orange and red, intensely ruffled and fluted. 4" fls. 7 open at a time on tall stem. L. 10c. M. 7c.
- Red Charm.** Pure med. dark red. Opens 8 to 9 at one time, Jumbo, 10c. L. 8c. M. 6c. Bulblets, \$1.00/100. (Not less than 100 sold.)
- Snow Princess.** Early, pure white. As good as the best. L. 6c ea. 60c doz.
- Spic and Span.** Tall, ruffled deep pink. Up to 10 open. L. 8c.
- Timor.** Beautiful and unusual shade of red. Jumbo, 12c. L. 10c.
- Assorted varieties.** No. 1 to Jumbo, \$1.00/doz. \$7.50/100, postpaid, or \$6.00 Express Collect. Nos. 2 and 3, fine bloomers, 50c/doz. \$3.50/100. On 100 we must send mostly No. 3 to customers beyond our 4th postal zone. Bulblets \$1.00/pint.
- Miniature Gladiolus.** Like a miniature carving, a cameo or fine lace, they are dainty, beautiful and alluring. Fine for cut flowers. All are good blooming size bulbs.
- Crinklette.** Ruffled orange pink. 15c. \$1.25/doz.
- Fairy.** Light lavender pastel. Dainty. 15c. \$1.50/doz.
- Fairy Fancy.** Cream and very nice. 15c. \$1.25/doz.
- Kriss Kringle.** True Christmas red. 15c. \$1.25/doz.
- Ruby.** Early, ruby red. 20c. 3 for 50c. \$1.75/doz.
- Snow Baby.** A very fine white. 15c. \$1.25/doz.
- White Butterfly.** By Kunderd. Early white. 20c. 3/50c. \$2.00/doz.
- White Lace.** Heavily ruffled, white with a creamy throat. One of the most dainty and beautiful. 20c.
- Please, order your Gladiolus early.
- Montbretia crocosmiflora**, a sub-genus of *Tritonia* resemble small gladiolus. Almost everblooming in warm weather. A good cut flower in orange tones. Hardy where ground does not freeze deeper than 1". In north, dig and store like Gladiolus. 25c ea.
- Neomarica** (Marica) have long been favorite house plants in the north, but rather rare. They are both curious and beautiful. The fugitive blue and white flowers on the tip of a leaf-like scape in Jan. to April are followed by small plants. They become heavy and the scape arches until young plants touch the soil and take root. Hence their common names, Walking Iris and Apostle Plant. **Culture:** Shade plants but they need early and late sun to induce flowering. Soil formula, sharp sand, leaf mould and peat or sphagnum. Evergreen. Keep well watered, constantly moist. Like most plants that are hardy and bloom well in So. Calif. gardens, they like cool temperatures, such as Cymbidiums, Veltheimias, winter blooming Oxalis, etc., tho for us they have also flowered well in the greenhouse along with African Violets and Cattleyas. A temperature range of 40° at night, to 60° daytime would be about right.
- Neomarica gracilis.** Smallest and earliest. Use 5" pot. 75c.
- N. Northiana.** Larger plant and flowers, slow propagator. Use 6" pot. \$1.75.
- N. hybrids.** We crossed the above species and raised plants with flowers as large as Northiana, as profuse as gracilis and plants midway in size. They are rapid multipliers. \$1.75. All 3 kinds for \$3.75.

## LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinum*s, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

**Gloriosa. Climbing Lily.** The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower but the larger ones will give 2 or 3 times as many. They also make larger, more showy plants.

**Culture.** They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. *Gloriosas* prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. We recommend only outdoor culture.

**Gloriosa rothschildiana** deserves the name **Glory Lily**. Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting and are used in corsages. Plant 4 ft. tall. Prices, small blooming size tubers, \$1.00, larger sizes that produce larger plants and more flowers at \$1.50, \$2.00 and \$2.50 ea.

## OXALIS FAMILY — Oxalidaceae

**Culture.** *Oxalis* do best in sandy soil. They do very well also in poor soil. In pots the drainage should be good and some coarse sand in soil will help. Most *Oxalis* like nearly full sun.

**O. crassipes.** Tuberous. Bright rose flowers. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.25 doz.

**O. crassipes alba.** White variety of above. 25c ea. \$2.25 doz.

**O. Regnalli.** Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white flowers. Tuberous rooted. 50c ea.

## THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or *Zantedeschia*, Fancy Leaf *Caladium*, *Sauromatum*, *Amorphophallus*, *Arum*, *Drunculus*, *Anthurium*, *Spathiphyllum*, etc. All are shade plants and need acid soil.

**Zantedeschias** are not true Callas, tho this is their common name. **Culture.** Colored Callas, *Zantedeschia elliotiana* and *Z. rehmanni elegans* may be potted or planted in the garden in almost frostless deep south. If the rest period, when the enzymes of bulbs and tubers are changing the stored starch into sugar, is too short, planting in cold wet soil may cause them to rot. When a bulb, corm or tuber is ready to grow, there will be root knobs on the base and top growth started.

A soil of peat and enough coarse sand to feel very gritty, as described for *Amaryllis* is good for most of the *Araceae*. Note exception as to *Anthuriums* and *Spathiphyllums*. Fertilize with Spoonit or manure water. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best. Hardy outdoors in S. Calif.

**Zantedeschia rehmanni elegans.** Improved light pink form. Jumbo bulbs, about 2" diam. or over, 75c. 1½" diam., 45c ea. Blooming size, 40c. Small tubers that may or may not flower, 25c, 5 for \$1.00. Use larger sizes for pots.

**Z. elliotiana.** Deep golden yellow. If not given enough sun they become tall and spindling and fail to flower. 35c ea. 3 for \$1.00.

**Z. aethiopica.** White Calla, may be planted as late as March 1. 50c ea.

**Amorphophallus revieri.** Sacred Lily of India. **Culture** like *Zantedeschia*. The tubers may be stored dry and allowed to flower before potting or planting. We have blooming size tubers for \$5.00 and \$6.00 ea. Smaller tubers for \$2.50 and \$3.50.

**Sauromatum venosum.** Lizard Lily. The long, serpent like spathe wriggles along on soil surface. I've seen persons jump, at their first look. Soil and culture similar to *Zantedeschia*. Large tubers, \$1.50 and \$2.00. Medium, \$1.00.

**S. nubicum.** Rare, collectors species. \$3.50.

**Anthurium andraeanum.** The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like, but rather flat, in glossy red, pink, orange, coral, rose and rarely white. They are much used for cut flowers in arrangements and corsages. They are ever-blooming if given correct conditions at all times, but sometimes take a vacation when very hot, very cold or dry.

**Culture.** Anthuriums and *Spathiphyllums* are tender tropical plants, suitable only for pot culture. **Soil formula.** They will grow in most any organic compost. We use and advise one part old osmundine, (discarded from orchid pots, new will do); one part peat. Add enough Sponge Rok or coarse sand to make compost very gritty and to hasten quick drainage. See Potting Directions under General Culture. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum. New roots must be kept covered.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 70° to 80° is a good daytime temp. Air should be very humid. Spraying foliage daily increases humidity. They should never become completely dry, thruout. Water about every two days.

**Shipping.** They can only be shipped by express in cold weather. We ship out of pot by mail or in pot by express, f.o.b. at the same price. If shipped by express you have the advantage of having the plant correctly established in a pot. If by mail, you must supply the pot and compost and the plant is set back a little. Instruct us whether mail or Express.

**Anthurium andraeanum. Shaffer hybrids.** Years ago Mr. Shaffer made personal trips to Hawaii by plane, selected and brought back the best types.

**Prices** 18" to 25", \$7.50, shades of orange to red, in pots f.o.b. express. Out of pot, postpaid \$8.50. It is well worth the difference to have them come by express. **Blooming size plants**, f.o.b. Express, \$5.00. Out of pots by parcel post \$5.50.

**A. crystallinum.** A beautiful foliage plant that does not need flowers. Leaves are cordate-ovate to 10" wide and 14" long, deep velvety green, prominently veined white. Pale rose on underside. Blooming sizes \$2.50 and \$3.00. Smaller plants, \$1.50 and \$2.00.

**A. scherzerianum.** This species is easy to grow as a house plant as it is less demanding about temperature, etc. Mature, old plants may become 15" to 18" tall, but they start blooming at only 4" or 5" tall. Colors range from red, spotted red and white, to white. Blooming size, assorted colors only \$3.75. Very large plants, \$7.50.

**A. Warocqueanum.** A magnificent foliage plant. Flowers not conspicuous. Leaves are long and narrow, deep green, veined white. We have only three very large plants. Out of pot, postpaid \$8.50. In pots, Express f.o.b. \$7.00.

**Spathiphyllum Clevelandi.** Close relative and formerly classed as an *Anthurium*. Very free blooming. Foliage is oblong and pointed. Flowers are pure white. Very attractive. Free blooming. They are easy to grow as house plants, in 4" pots. Small plants, \$1.50. Blooming sizes, often in bloom when sent, \$2.50. Out of pot, postpaid. In pot, Express, f.o.b.

**S. floribundum.** Larger and better than *S. Clevelandi*. Stock limited. \$3.50, out of pot postpaid or potted, Express, f.o.b.

## THE GESNERIA FAMILY—Gesneriaceae

The Gesneriads listed here are tropical or semi-tropical. They are strictly house plants outside of the tropics. Most of them are for the warm house. All are either tuberous rooted and deciduous or fibrous rooted and evergreen.

The American Gesneria Society, % Mrs. Helen Darson, Secy., 3749 Star King Circle, Palo Alto, Calif., publishes much useful information on this family. For cost of membership and other information please address the Secretary. The Gloxinian, Gray, Oklahoma supplies much useful information.

**Gloxinias** are favorite florists, greenhouse and house plants. Potted plants usually sell for about \$2.00 or \$3.00. It costs much less to buy the bulbs and grow your own. It's more fun too.

**Culture.** The soil may be one part by volume of sharp, coarse sand and 2 parts peat or peat and leaf mould. Add 1 tablespoon bone meal for a 6" pot. Mix thoroly. Set tuber a little under soil surface concave side up and mulch with  $\frac{1}{2}$ " wet sphagnum. Last of all water until a little runs thru at bottom. These are tropical plants. The best starting temperature is at least 80°. They will start, but a little more slowly at 70°, with 60° or over at night. Keep soil moist and they can be in full sun until foliage appears, then slightly shaded. The plants need good light and more sun than most Gesneriaceae. Leggy plants result from insufficient light. Fertilize with Spoonit or liquid manure about every 3 or 4 weeks. Sun must not touch wet foliage.

**Gloxinias. The old time ten.** Improved. California grown, 1½" to 2" tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrina**, from light rose to dark lavender. Characteristics are the small tiger spots; **Violaceae**, soft violet. Price 40c ea. 6 for \$2.00, if all one kind or assorted and in one bag. Complete collection, labelled, \$3.75.

**The Newer Gloxinias.** **Defiance**, red Scarlet, 50c. **Queen Wilhelmina**, carmine, 50c. **Waterloo**, deep red, 50c. **Hollywood**, novelty, blue blending to scarlet purple, 55c. **Pink Edge**, 50c. **Star Dust**, huge burgundy, 55c. **Velvet Queen**, huge ruffled, velvet red, 55c. **Crimson Rose**, 50c. One each of the 8 var., \$4.00. We have a few mixed varieties and sizes for 35c ea.

**Gloxinia Seed.** We offer seed packets of the following var. at 50c per packet and a self addressed envelope. The number of seed in a packet range from ten upward, depending on the variety and scarcity. Seed are very small but every one grows. Varieties, **Beacon**, rich dark red, flexible leaves; **Blue Heaven**; **Crimson Glow**, glowing scarlet, free blooming; **Marveille**, brilliant red, edged white, free flowering, flexible leaves; **Panzer's Scarlet**, brilliant, lg. flowers; **Rose Pink**; **Tigrina**; **Rose Sensation**, new color, carmine rose; **Star Dust**; **Swiss Emblem**, brilliant scarlet red, white margin; **Velvet Queen**; and **Mixed seed**. Don't forget the stamped, self addressed envelope, required for all seed orders. Also Californians pay 2c sales tax on a packet.

**Culture.** Place fine grained vermiculite or terralite in the bottom of a plastic refrigerator dish and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We grow many rare seeds by this method, including African Violets. Gloxinias flower at about 5 months.

**Streptocarpus** are fibrous rooted evergreen and can only be moved as growing plants. The culture is much the same as for Gloxinias except as to temperature. They thrive in a cool house and are easily grown in a lath house in summer. The color range is similar. The flowers are smaller and freely produced. They are followed by long twisted seed pods, hence their name. Blooming size, \$1.00. Double plants, \$1.50.

**Streptocarpus seed.** Assorted colors from fine strains. Handle as advised for Gloxinia seed. \$1.00/pkt. and self addressed stamped envelope.



**S. Wiesmoor Hybds.** These are claimed to be entirely new and superior to any others. Fls. are on wiry stems, useful for cut flowers. These are Dutch import and expensive. You therefore get fewer seed for \$1.00. (Stamped, addressed envelope.)

**Episcias** resemble African Violets in form and other ways, yet are entirely distinct. African violets flower profusely. Episcias are very showy foliage plants but have brilliant, usually red, flowers, not so freely produced. They are natives of the American tropics, not African. Their flowers are solitary or clustered, not in cymes as in African Violets. The resemblance is casual, not botanical. But their red flowers and general contour of the plants have resulted in promotion of *E. fulgida* (often sold as *E. coccinea*) as a Red Violet. They are very tender tropicals and should not be colder than 60°. At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50°. They make stolens or runners like a strawberry and new plants are made in a similar manner. We plant in baskets of sphagnum and hairpin the little plants on stolens to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. Flowers are usually bright scarlet and foliage usually villous, or hairy and velvetlike. They may also be grown in pots, same soil as African Violets. Either way they require constant moisture. When you receive the plants do not remove or tear apart the mass of sphagnum which contains their delicate roots. Plant the entire mass.

**Episcia cupreata.** Type variety. Red flowers. Very dark bronze leaves with a slight silvery tone along midrib. \$1.00.

The following are cultivars or sports of *E. cupreata*. All have the same red flowers.

**E. Acajou.** Dark bronze with wide silvery green midrib. \$1.00.

**E. Chocolate Soldier.** Dark chocolate with narrow silver midrib. \$1.00.

**E. Emerald Queen.** Dark green with silvery green midrib. \$1.00.

**E. Frosty.** Prevailing color is the frosty green, spreading to leaf margins from the center and toward the margins are markings of dark green. \$1.00.

**E. Harlequin.** Very shiny leaves, wide green zone along midrib with very dark greenish bronze between pinnae from the midrib. \$1.00.

**E. metallica ("Kitty").** Leaves densely covered by short hairs, or villous. Very dark bronze with silvery pink center stripe in midrib. Reverse side, vinaceous purple. \$1.00.

**E. Silver Sheen.** Silvery green leaves, narrowly bordered dark green. \$1.00.

**E. Sylvan Beauty.** Green central zone with greenish bronze on outer portion. \$1.00.

**E. Splendens. (Variegata).** Silver green markings on emerald green background. This is the last of cupreata cultivars. \$1.00.

**E. cupreata, var. viridifolia.** Nile green leaves. The best bloomer of all. \$1.00.

**E. fulgida. (Coccinea, Red Flame Violet).** Medium bronze with silvery green veins. Lovely red flowers—but not a "violet." \$1.00.

**E. lilacina,** type variety (Fanny Haage). Large lilac flowers. Broad green center on greenish bronze background. \$1.00 each.

**Special.** We can now offer the rare **Episcia dianthiflora**. This is a vigorous grower with small green leaves and white flowers with fringed petals in spring and summer. \$1.75. 13 var.; our selection for \$10.00.

**Columnneas.** Are epiphytic climbing vines, having large, vivid red flowers. They may be grown in pots, soil similar to that of other Gesneriads but we prefer to grow in wire baskets of pure sphagnum or with the center of sand and peat, equal parts.

**Columnnea gloriosa.** The most profuse bloomer. **C. Schiedeana**, very large, thick stems. **C. microphylla**. **C. Banksii**. **C. Allenii**. Plants that should flower in their next season, \$2.00.

**Reichsteineria** is now the valid name for plants formerly known as *Gesneria* and later as *Corytholoma*, the species is still probably *cardinalis*. The large brilliant red flowers are attractive. Grow the seed as for *Gloxinia*. Seed packet 50c and stamped, addressed envelope.

**Reichsteineria cardinalis.** Delightfully green slightly hairy, heart-shaped leaves, and long, curved flowers, borne in profusion, in the brightest of scarlets. Blooms resemble a

Parrot's beak. May last longer than those of other gesneriads. Grow like Gloxinias with lots of light. 50c ea.

**Aeschynanthus** (Trichosporum). This is a nice trailing, almost woody vine. In nature, they are epiphytal and climb trees. The plants are attractive and the freely produced large flowers are tubular and vividly colored.

They are tender tropicals and shipment will be made only when weather permits. We grow them in wire baskets, lined thickly with sphagnum and with peat and sand in center. They do well in pots. They require constant moisture. Leaves and flowers drop when dry.

**Aeschynanthus lobbiana** has scarlet fls. in a purple calyx. **A. pulchra** has scarlet fls. in a green calyx. They differ a little in both flowers and foliage also one is slightly earlier. Rooted cuttings of either for \$1.25. post paid. Established in 10" wire baskets \$3.50. f.o.b. express.

**Smithiantha**. (Naegelia) are fine, tuberous rooted, foliage plants. The rounded cordate leaves are covered by soft hairs that give a velvety appearance and cause them to change colors when viewed at a different angle. The showy flowers are long, tubular and in pink and orange shades. Minimum temperature 60° for best growth. We grow in pots in soil as advised for Gloxinias. They should not be too deeply shaded nor ever become dry. We offer dormant tubers delivered about early summer, usually. The dormant period is somewhat variable. They must be planted at once when received.

**Smithiantha zebrina**. The leaves are mottled and veined red brown. \$1.00.

**S. cinnabarina**. Gorgeous dark red velvety leaves, cinnabar red flowers. \$1.00 ea.

**S. hybrida, Orange King**. Very beautiful leaves with changeable colors. \$1.00.

**S. hybrida, Orange Delight**. Foliage mottled red-brown. Flowers orange outside, yellow, spotted orange inside (as most of them are). \$1.00.

**Collection of all 4 varieties**, for \$3.75.

**Achimenes** have been popular plants for a very long time. They are not too hard for the average amateur. The plants and the flowers are diverse in size and form and one should plant a number of varieties.

**Culture**: From 1 to 5 tubers may be grown in a 5" pot. We grow them entirely in wire baskets and this seems to us to be the perfect way. We use 16" baskets but for amateurs we recommend 10" baskets rather than larger or smaller. For only 2 or 3 it is all right to use pots or 8" baskets. Some commercial growers use gallon tin cans.

The compost in pots may be the same as for Gloxinias and other Gesneriads. In baskets we line them first with sphagnum and fill center with fibrous peat. It would probably be better to use equal parts of peat and coarse leaf mould. Some sand can be added.

The name is said to mean that they do not like the cold. This may be fanciful but is nevertheless true. They like warm days and nights. A good temperature will not be under 60° at night and up to 80° daytimes, and higher does not hurt them. Protect them from winds or even strong drafts. It dries them out too much and the compost should never become dry. They need about the same sun exposure as Gloxinias.

There is much controversy about names. We do not guarantee our list to be true to name for any certain nomenclature. We have a large stock and are reducing prices but it is best to name a few substitutes. If you store bulbs be sure to cover with vermiculite. Sand is second best. You may order by name or number.

**Achimenes**, 1. **Adele de la Haute**. Shell pink fls. 20c. 3/50c. 2. **Andersoni**. Very large, pastel blue. 20c. 3/50c. 3. **Atropurpurea**. Red purple. 20c. 3/50c. 4. **Brilliant**. Bright lavender. 50c. 5. **Camille Bronzoni**. Pink lavender. Small fls. in profusion. 25c. 3/60c. 6. **Carmen The Gypsy**. Dark foliage with dark carmine fls. 35c. 3/\$1.00. 7. **Carmine Queen or Firefly**. Bright Carmine. 30c. 3/80c. 8. **Cattleya**. Orchid blue, 35c. 3/\$1.00. 9. **Charm**. Large, delicate pink fls. on a small plant. 50c. 10. **Dainty Queen**. Large, white fls. with lavender dot in center. 35c. 3/\$1.00. 11. **Echerina**. Rare. 35c. 12. **Edmond Bossier**. White ground, striped purple. Yellow center. 25c. 3/60c. 13. **Francois Cardinalis**. Rare dwarf. Small blue and white, trumpet shaped fls. 50c. 3/\$1.05. 14. **Galatea**. Hyacinth

blue, light center. 20c. 3/50c. 15. **Ghiesbreghtii**. Large, tubular shaped, red violet. 30c. 3/75c. **Giant Pansy**. Variegata. Sky blue, spotted yellow and purple. 40c. 3/\$1.10. 17. **Harry Williams**. 2 ft. stems. Cerise fls. 35c. 3/90c. 18. **Little Beauty**. Dwarf plant. Salmon pink fls. 25c. 3/60c. 19. **Longiflora Maduna**. Rose lavender, white throat. Leaves veined red. 35c. 3/\$1.00. 20. **Longiflora major magnificum**. Cobalt blue. Very large fls. 25c. 3/60c. 21. **Longiflora margarita**. Pure white. 50c. 22. **Loveliness**. Violet fls. Late, profuse bloomer. Small plant. Deserves its name. 20c. 3/50c. 23. **Magnificent**. Petunia purple fls. very beautiful sturdy plant. 25c. 3/65c. 24. **Margaret**. Pure white. 25c. 3/65c. 25. **Master Ingram**. Crimson red, orange throat. 40c. 3/\$1.10. 26. **Masterpiece**. Description lacking. 50c. 27. **Mauve Queen**. Violet blue or mauve, spotted crimson with a yellow eye. 45c. 28. **Maxima**. Fls. 3" wide. White, veined red with purple eye. 30c. 3/80c. 29. **Mexicana**. Vigorous flowering, dark. 35c. 3/\$1.00. 30. **Milton**. Strawberry red, orange center. 35c. 3/90c. 31. **Miniata**. Early. Strawberry red to carmine. 35c. 3/90c. 32. **Mme. Gehenne**. **Grandiflora**. Rose purple fls., beautiful foliage. 35c. 3/90c. 33. **Patens major**. Small plant. Reddish violet fls. with white throat. 20c. 3/50c. 34. **Pedunculate**. Orange red fls. spotted red, yellow throat. Blooms late. 40c. 3/\$1.00. 35. **Pulchella**. Small, bright scarlet. 30c. 3/75c. 36. **Purple King**. Most satisfactory of all. Vigorous, profuse bloomer, rich purple. Early. 20c. 3/50c. 37. **Scarlet Beauty**. Scarlet fls. on a long stem. 45c. 3/\$1.25. 38. **Venusta**. Violet purple. Sometimes semi-double. Profuse bloomer. 35c. 3/95c. 39. **Vivid**. Cerise like. Medium late. 30c. 3/85c.

**Assorted Varieties**. 20 for \$1.00.

The nomenclature of *Achimenes* is not perfectly established. Therefore we do not guarantee the names under which we list them.

## AFRICAN VIOLETS—*Saintpaulias*

Few would question the statement that African Violets are the most popular house plant at the present time. They fit perfectly into the modern smaller homes and rooms, where things are fixed or built in. Every convenience in a small space. They may be grown in an east, south, west or north window or even the basement if given artificial lighting and correct temperature. See under Garden Reference Books the new book, *Growing Plants Under Artificial Lights*.

They win favor because of their daintiness and beauty, their everblooming habit, their diversity in foliage, flower color and form. The introduction in 1955 of double pink varieties, for the first time have enhanced their popularity. There seems to be no limit to their possibilities in the hands of breeders, except that their color range can never include yellow or true spectrum red. The reds are always purple toned.

**Culture**. The question most often asked is, "How can I get constant bloom? My plants are healthy and grow luxuriantly. The foliage is deep rich green, beautiful plants but no flowers." The answer is, you do not give them enough light. Note the discussion under **Sun exposure**.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two. Or it may result from too low relative humidity. This should be 40 to 60%.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Nor do we ship on very hot days in summer.

**Watering.** Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. The interval between waterings should be long enough to permit the top soil to become slightly dry. Do not use pots that have no hole at bottom for drainage. Use sub-irrigation infrequently. We prefer regular pot watering.

**Good ventilation** is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

**Soil formulae.** Plants have a considerable tolerance and do well in a wide variety of soils. Soil should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good. We use about one half compost, one half peat with enough Sponge Rok to give good drainage.

If you are unable to supply your own soil mixture, the best we know about is Black Magic African Violet mix. Listed under "Supplies" in this catalog.

**Fertilizers.** We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

**Sun exposure.** Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity is one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely plants in a south window, anywhere in the north temperate zone, in winter, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The color of the foliage will tell you what they can endure. When healthy plants have light, yellowish foliage they probably receive too much sun. For checking, select a plant having green foliage, under normal conditions, not a dark foliage plant like Holly or Pink Delight nor one like Frosty having ivory or white areas.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in *How To Grow African Violets* (which you should have,—see our book list,) says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the Northern states where winter days are short and dull. For the most complete information on this, send us \$3.50 for Peggy Schulz' book, "Growing Plants Under Artificial Light."

**Humidity.** The humidity of our homes is likely to be not much over 25%. One can increase the humidity around the plant sufficiently by setting the plants in saucers. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots. A saturated sponge in a shallow dish will help humidify air. If you have a greenhouse, keep the walks wet.

**Pests.** Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. Wonder Garden Spray, used as a spray, is effective. Antrol African Violet Insect Bomb is also good if used as directed. Badly infested plants should be discarded or at least removed from the vicinity of all other house plants. All effective

insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

**Cyclamen mites** are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mites spread to all the plants and effective measures must be at once applied. We have found the most effective remedy is to spray with Isotox and Wonder Garden Spray, which are listed under "Supplies." Immediately remove infected plants into quarantine. Do not handle infected plants, then healthy plants.

Customers are invited to visit our nursery when in Los Angeles area. Drive east on Garvey, N. on Azusa, E. on Arrow Hwy. to Esther St., S. one block, or take La Verne Bus. Get off at Firey and walk west one block to Esther. Then south one block.

Orders from distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in perfect condition. They did not quit blooming. We charge the customer the excess of Air Parcel Post above the cost of Parcel Post to our 8th Postal Zone. Please state in your order that you will pay the difference promptly if your estimate is too low. But send your estimated amount with order.

**Starting leaf cuttings.** A good many growers start cuttings in water. We believe a better way is to start in terralite, (a fine grained form of vermiculite), kept moist and in good light but no sun. Long distance shipments should go by air, the same as for plants. If leaf is wilted, soak 2 hours in water or until leaves are fresh looking.

**Sales Tax.** Californians must include 4% Sales Tax. Out of state customers sending plants as presents to California friend must also pay it. Please read "Terms and Instructions for Ordering," and comply on all points.

**Arctic Nite.** Beautiful vivid dark blue double. \$1.25.

**Bernice.** Double light blue flowers. Soft medium green lvs. \$1.00.

**Blue or Red Albino Girl.** Small, deeply notched, round variegated girl leaves. \$1.00.

**Blue Peak.** Double blue flowers edged white. Geneva type. \$1.50. Sm. \$1.00.

**Bud's Pink Cupid.** Very large double pink on fine girl foliage. \$1.50. Sm. \$1.00.

**Bud's Pink Fairyland.** Double pink. \$1.50.

**Bud's Pink-O-Wink.** Double pink round dark girl leaf, red-backed. \$1.50. Sm. \$1.00.

**Bud's Pink Waltz.** Very black-green quilted leaves. Double deep pink fls. \$1.00.

**Carmen.** Claret red flowers. \$1.00.

**Clementine.** Frilled white flowers, girl leaf. \$1.25.

**Crusader.** Double light red flowers. Dark green plain foliage. \$1.50. Sm. \$1.00.

**Double Garnet.** Good red double. Profuse bloomer, dark green foliage. \$1.00.

**Double Inspiration.** Beautiful double lavender flowers in abundance. \$1.50. Sm. \$1.00.

**Double Midnight.** New. Very large red double. Sm. \$1.00.

**Double Polar Ice.** Double white flowers. Dark leaves. \$1.00 small.

**Double Sea Shell.** \$1.25.

**Evelyn Johnson.** Lovely large double pink blooms on waxen girl foliage. Sm. \$1.25.

**Falstaff.** Large double red bloom; supreme foliage. Sm. \$1.00.

**Fantasia.** Lavender flowers with dots and dashes of dark violet. \$1.50.

**Finlandia.** Midnight purple, fringed fls. Glossy dark bronzy leaves, ruffled. \$1.25.

**Floradora.** Lovely rosy orchid with purple overcast. Fringed fl. Dark leaves. \$1.25. Sm. \$1.00.

**Geneva Beauty.** Purple flower, white edge, does not fade. \$1.00.

**Giant Purple Monarch.** Very large flowers. Sport of Purple Knight. Hard to mail as foliage is very brittle. We will ship only \$1.00 size.

**Hi Loa Light Blue.** Dark wavy leaves. Light blue fringed flowers. \$1.25.

**Imp. Boyce Edens.** Dark green leaves. Lavender bicolor flowers. \$1.25.

**Kings Delight.** Very dark green, red underneath leaves. Orchid flowers. \$1.25.

**Lavenda.** Rose pink double. Makes a very symmetrical plant. \$1.50. Sm. \$1.00.

**Little Aristocrat.** Ruffled semidouble dark blue blooms on very dark holly type foliage. Leaf almost black, red backing. Small \$1.25.

**Los Angeles.** Flowers are very large, hortense violet. Freely produced and fully double. \$1.00.

**Mamselle.** Double pink on rounded waxen girl foliage; symmetrical habit. \$2.00.

**Miss Ruffles.** Fringed dark green foliage, ruffled white single flower, blue eye, with occasional blue markings on petals. \$1.50. Sm. \$1.00.

**Ohio Bountiful.** Good double pink. \$1.00.

**Painted Girl.** Snowy white, bordered by orchid. \$1.25.

**Pink Angel.** (Pink Neptune.) Smooth quilted leaves. Single pastel pink. \$1.50.

**Pink Cloud.** Lovely double pink. \$1.50.

**Pink Cushion.** Double pink. Small plants only this spring. \$1.00.

**Pink Puff.** Lovely double pink, very large flowers. \$1.50. Sm. \$1.00.

**Pink Topsy.** Very lovely double pink. \$1.50. Sm. \$1.00.

**Pink Victoria.** An excellent new double pink, a good grower. Good foliage. Flowers very large and fully double. \$2.00. Sm. \$1.00.

**Pink Waverly.** (Harris.) The lovely new pink pictured in the Times Home Magazine last spring. Dark pink fringed flowers. Leaves dark and wavy. Small plants late spring \$2.00.

**Prima Donna.** Very large light lavender double. Supreme foliage. \$1.25.

**Queens Royal.** Dark blue double, dark green girl type leaves. \$1.25.

**Red Mahogany.** Very good flowering variety. \$1.00.

**Rose Pink.** Very dark pink small foliage. \$1.50.

**Rose Wings.** Large white ruffled flowers, shaded with rose orchid. Supreme foliage. Sm. \$1.00.

**Ruffled Geneva.** Bronze foliage, ruffled flowers and leaves. Blue with white edge. \$1.50. Sm. \$1.00.

**Ruffled Lace.** Flowers similar in form to Ruffled Queen, foliage not so brittle, deeply cut edge. \$2.00.

**Ruffled Queen.** Very popular. Fringed red purple fls. \$1.00.

**Show Aristocrat.** Large double blue and white flowers. \$1.50.

**Show Day.** Extra large white with blue overlay, darker in center. \$1.50. Sm. \$1.00.

**Show Queen.** Variegated foliage. Mutation of Ruffled Queen. Fl. same. \$1.75. Sm. \$1.00.

**Silver Moon.** One of the best flowering whites. \$1.25. Sm. \$1.00.

**Snow Ball.** New. Lovely very double white. \$2.00.

**Snow Fairy.** Light green pointed girl leaves. Double white. \$1.00.

**Spanish Lace.** Deep blue ruffled edge flower, like Ruffled Queen. Outstanding. \$2.00. Sm. \$1.00.

**Snowy Princess.** Variegated foliage, giant red bi-color flower. \$1.50. Sm. \$1.00.

**Sugar Babe.** Lavender and plum bicolor, with white edging. Girl foliage. \$1.25.

**Sunburst.** Variegated foliage. Red flowers. \$1.00.

**Texas Fringe.** Orchid fringed flowers. Fluted and ruffled leaves with red back. \$1.00.

**The Bride.** Lovely white and blue double flowers. \$1.25.

**Trueheart.** Single pink, large, very deep rose eye. \$2.00. Sm. \$1.00.

**T-V Chaperone.** Frilled double red on rather dark, lightly waving, red backed foliage. \$1.50. Sm. \$1.00.

**T-V Cut Velvet.** Ruffled, red-backed foliage. Red, fringed, edged green. Double flowers. \$2.00.

**T-V Jealousy.** Reddish-purple, fringed double flowers. \$2.00.

**T-V Rose Frills.** Foliage blackish-green, red backed. Frilled single flowers deep rose. \$1.50. Sm. \$1.00.

**T-V Rose Prom.** Frilled single flowers in lovely shade of powder-rose. Foliage bronzy-green, rosy-red backed. \$1.50. Sm. \$1.00.



**T-V Summer Dream.** Red backed, forest green foliage, fluted. Clusters of frilled light lavender flowers. Both single and double flowers. \$2.00.

**T-V Swirling Petticoats.** Single deep purple flowers with crimped white picotee edging. Lovely foliage of gleaming waxen forest-green with lighter midriff, rippling up glowing scallops of under red. \$2.00.

**Wedding Veil.** Single white, girl leaves. \$1.25.

**White Madonna.** Double. Girl foliage. \$1.00.

**White Pride.** A heavy flowering double white. One of the best. \$1.75. Sm. \$1.00.

**White Pride Supreme.** Same as above but has very large double flowers with supreme foliage. Small only \$1.00.

**Zephyr Pink.** A very heavy bloomer, large flowers. \$1.50. Sm. \$1.00.

**Miniatures.** We have only a few of the following at \$1.00 each. Please name a substitute or allow us to substitute. Baby Fingers, Bashful, Bubbles, Cutie Pie, Dollie Dimples, Du Bonnet, Heidi, Chartruss (Semi) Mu lan, Mulberry Curls, Shine Boy, Sassy Lloyd, Star Tips, T-V Bunnyhop, White Elf, Zoella.

**Miniatures.** Leaves at 50c each, \$5.00 dozen for the following or the ones listed in plants above. Alma Wright, Ashes of Roses, Blazing Girl, Blue Buttercup, Bronze Elf, Cascade, Easter Bunny, Elf Toes, First Love, Flamingo Girl, Florencita, Gay Senorita, Gremlin, Grumpy, Jessie Cutup, Lini, Minneapolis, Moonlite, Morning Glory, Pink Queen, Pixie, Precious, Princess Pat, Show Glow, Spider, Sunshine Baby, Temple Orchid Rose, Temple Satin, Thumbelina, Ting O'Ling, Tinker Belle, Tiny Bells, Violette, Elf.

Leaves 50c each, \$5.00 doz.

Amazia	Love's Embrace, white	Royal Jewel
Alaska, dbl.	Mamselle, dbl. pink	Ruffled Geneva
Annabelle	Miss Monroe, dbl.	Ruffled Lace
April	Multiflora Blue	Ruffled Queen
Atomic Pink	Multiflora Lavender	Show Cloud, dbl.
Blue Cushion Supreme	Multiflora Mauve	Show Day
Blue Halo	Multiflora Pink	Show Queen
Bud's Cherry Pink, dbl.	Multiflora Sky Blue	Show Star
Bud's Fairyland	Multiflora White	Show Stopper
Bud's Pink Cupid, dbl.	Miss New York	Springtime
Bud's Pink-O-Wink, dbl.	Miss Chicago	Snow Ball, dbl. white
Bud's Pink Waltz, dbl.	Nonnie	Snowy Princess
Bud's Pink Powder Puff, dbl.	Northern Prize	Snow White
Cara Mia	Ocean Waves	Spanish Lace
Cup of Claret	Pink Caress	Sugar Babe
Dixie Fairy	Pink Celebrity, dbl.	Swank, dbl.
Double Pink Holiday	Pink Cloud, dbl.	T-V Cut Velvet
Double Pink Hoosier	Pink Coral Queen	T-V Jealousy
Double Midnight	Pink Cushion, dbl.	T-V Patio Dance
Double Polar Ice	Pink Melody	T-V Summer Dream
Double Sea Shell	Pink Parfait	T-V Stag Line
Double Uncle Bob	Pink Puff, dbl.	T-V Swirling Petticoats
Easter Dream	Pink Waverly	Thumbelina
Elizabeth the Queen	Popcorn	Uncle Bob
Evelyn Johnson, dbl. pink	Pot O'Gold	White Pride, dbl.
Falstaff	Queen's Royal	White Price Supreme
Finlandia	Rose Glow	White Caps
Flamingo, dbl. pink	Roseonna Green Pearl	White Orchid
Georgia Peach	Roseonna Nancy Carr	White Velvet, dbl.
Giant Purple Monarch	Roseonna Pink Swan	Winter Green, dbl.
Imp. Boyce Edens	Rose Pink Queen	Wintry Nite, dbl.
June Bride	Rose Wing	Zephyr Pink

African Violet leaves 35c each. 3 for \$1.00. \$3.00 doz. Any over at 25c each.

Air Waves, dbl. white	Evening Shade	Orchid Velvet
Alaska Waters, dbl. blue	Fairy Queen	Pacific Shadows
Angels Blush	Falcon	Pandora, grangers
Attraction	Fantasy Dbl. Ann	Pastel Princess
Autumn	Fantasy Edge	Picadilly, dbl. pink
Aurora	Fischers Pandora	Pink Angel
Bavaria	Floradora	Pink Delight
Beauty Girl	Garden, dbl. white	Pink Ideal, dbl. pink
Bernice, dbl. lt. blue	Gaucht	Pink Lace
Black Fringe	Geneva Beauty	Pink Shocking
Black Beauty	Glamour Boy	Prima Donna
Blue Cluster, dbl.	Green Pearl	Queens Cushion
Blue Cushion, dbl.	Harvey's Harvest	Royal Emperor
Blue Jewel	Hi Loa Light Blue	Red King
Blue Lady	Holly	Red Mahogany
Blue Ridge	Honeymoon	Sailor Girl
Blue Tiara	Indian Girl	Sea Girl
Blue Summit, dbl.	Indianola	Show Blue
Blueva, dbl.	Innocence	Show Pink
Blushing, dbl.	Inspiration	Show Sensation
Calif. Dark Plum	Irresistible Girl, dbl. pink	Silhouette
Carmen	Juno	Starglow
Carocal	Kings Delight	Temple Satin
Celery	Lacy Lavender	Texas Fringe
Charo	Lady Grace	The Bride
Christina	Lav. Pink Debutante	Tinted Girl
Clementine, white	Lav. Pink Princess	Tinker Belle
Crusader, dbl.	Lavenda, dbl.	T-V Mambo
Daisy Mae	Lavida, dbl.	T-V Pert
Delight, dbl.	Lilac Time	T-V Rose Frills
Detroit Girl	Marine	T-V Rosefroth
Double Fantasy	Maro	Velvet Queen
Double Garnet	Minnetonka, dbl.	Waysata
Double Inspiration	Miss Ruffles	Wedding Bouquet
Dream Girl	Moonlight	Wedding Veil
Dupont Lav. Pink	Navy Bouquet	White Madonna
Dusky Princess	Nightingale	Wild Rosa
Eclipse	Ohio Bountiful, dbl. pink	
Edith Carvelle	Orchid Geneva	

## BEGONIA FAMILY—Begoniaceae

**How to Grow Tuberous Begonias.** No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics. Florida customers have reported failure.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Our flowers tho are smaller than those grown in cooler areas. Water hurts neither foliage nor flowers. The best place is in a lath house, north of a building or under trees here.

Worth Brown, in his book on Tuberous Begonias (which you should have; see our listing under "Books") recommends them also for pot culture in the house or green-houses. The tubers we sell should have 7" pots.

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use  $\frac{2}{3}$  leaf mould and  $\frac{1}{3}$  rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth. It is safe to add a tablespoonful of bone meal to each pot.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber. Begonias are shade plants but to bloom well they should have all the sun they can stand without burning.

Begonias like moisture but do not over water starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber—except on the Lloydii. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list  $1\frac{1}{4}$ " -  $1\frac{1}{2}$ " tubers, a medium size. The size of tubers does not govern size of flowers. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

**Imported Begonias.** Be sure you do not purchase them. They are fine looking tubers but produce poor flowers. The great improvements made in recent years are wholly due to a small group of California growers, including Brown and Vetterlee.

**Prices.** Please note that the dozen rate applies only when 6 or more tubers of one kind or assorted are packed in one bag. If separately labelled, 12 tubers take the single rate as is our rate on all bulbs.

**Giant Double Camellia Flowered.** Ten colors: white, pink, rose, blush, yellow, apricot, salmon, orange, scarlet, red. Price 30c ea., six, one color only or assorted in one bag. \$1.50. The ten var., in one bag for \$2.60.

**Giant Double Carnation Flowered.** Same as Camellia type except petals are fringed. Six colors: White, pink, yellow, salmon, orange, red. 30c ea. 6 of one kind or assorted, \$1.50. All 6 colors in one bag for \$1.60.

**Giant Double Picotee.** White with pink edge, white with red edge, salmon with scarlet edge. Rose and salmon 30c ea., all five for \$1.30. Six, one kind or assorted for \$1.50.

**Giant Single Crispa or Frilled.** Very large, profusely frilled and ruffled, single flowers. Mixed colors. 30c ea. 6 for \$1.50.

Double Hanging Basket, or Lloydii. Just right for baskets but look nice in pots or in a rock garden. The long pendent stems are loaded with small Camellia and Rose type flowers. 8 colors: white, rose, red, orange, yellow, salmon pink, apricot, scarlet. 30c ea. 6 of one color or assorted \$1.50. All 8 colors in one bag, \$2.00.

**Begonia Special.** Five tubers, our selection, assorted varieties, \$1.00. (Not labelled.)

**Begonia Evansiana.** Hardy Tuberous Begonia. No northern customers have reported its loss by freezing. If mulched we will guarantee hardy. Large tubers can be planted 4" deep, smaller in proportion. The 2 ft. plants have typical begonia foliage and a multitude of pink flowers. Recommended for shade garden, but stands quite a bit of sun if watered liberally. Order as early as possible, as often long sprouts have developed by Apr. 1. Sizes as available, 50c ea. 6 for \$2.50.

All of the above 33 varieties of Tuberous Begonias, each type in a separate bag, listing separately for \$9.50. Price \$8.50.

The following named varieties are the finest of all tuberous Begonias.

**Autumn Glow.** Extremely large cristata. The crests are deep copper contrasting with the apricot of the rest of the flowers. Up to 10" wide.

**Red Triumph.** A ruffled camellia type of ruby red with a velvety texture. Very large flowers.

**Sunset.** Profusely frilled crista type, light copper with scarlet edge.

These are not graded to size but are usually close to 2" and will make large plants. Price \$1.00 ea. All three \$2.80.

Complete collection of all Tuberous Begonias listed, 37 varieties, \$11.00.

## THE ORCHID FAMILY—Orchidaceae

The ideal place for an amateur to grow orchids is in a hobby greenhouse, but in parts of Fla. or similar climates and So. Calif. one can grow **Cymbidiums** in a lath house in half shade. Temperatures should not go much, if any, below 28°. In case of a bad cold spell cover the plants with leaves, newspapers or cartons. By this method, we once saved our Cymbidiums when we had a temperature down to 20°. They grow well in a mixture of loam, peat, leaf mould and coarse sand, equal parts.

The hardier types of Cypripediums, such as Cyp. insigne are injured very little if any by temperatures near freezing but for growth and flowers keep them above 40°. Those with mottled foliage such as Cyp. callosum, (more properly Paphiopedilum callosum) are tropical and grow at about the same temperature range as Cattleyas. In their habitat in tropical Asia they probably grow in soil but the best potting medium is osmunda and sphagnum, equal parts. They should never be allowed to become dry. They should be shaded slightly more than cattleyas.

The amateur needs references in order to learn the proper conditions and culture methods. We have entirely sold out the pamphlet, "How To Grow Orchids." We still have a supply of our 1949 Price List which gives brief but usually sufficient directions for many species including Cattleyas. The listings and prices in this 6 page pamphlet are cancelled. Order plants only from this catalog. New price is 25c. None are given free with orders.

**Culture of Cattleyas.** By far the most desirable of orchids. Many amateurs are having success in growing and flowering this most beautiful flower. When ordering, if not before be sure to order the "1949 Orchid Price List." Briefly you must have a greenhouse, a room or a glassed in porch where the plants will have good, strong light but no direct sun, unless a little in very early A. M. or late P. M. Greenhouse glass must be shaded by a coat of white wash or shading compound. In the home, shading may be had by using muslin curtains. If the foliage becomes very light green or yellowish the light is too strong; if a deep rich green, the shade is too much. 65° to 80° is close to the best temperature range. Note the temperature, light exposure and humidity favorable to African Violets. The same is about right for Cattleyas. You can grow them side by side. But watering is different.

We spray the foliage of Cattleyas at least once a day in summer and if hot often twice. This cools them. Do this about noon, earlier if temperature becomes too high. Do not spray in late P. M. as foliage should become dry before night. When cool weather arrives we spray less often, much less often in winter. Once or twice a week may be enough or even too much if you do not properly heat for their comfort. A little water held around the base of a bud spathe may cause it to blacken and rot off. Much water on the roots or surface of osmunda will rot the roots. Over watering Cattleyas is the most common error. We do not usually pot water oftener than once a week and often spraying is enough if some falls on the osmunda. You must study your plants and note their reactions. Success will reward you.

Customers who have bought Cattleyas from us may consult us about their plants if trouble occurs. All of our plants have been recently repotted by a professional and in best grade osmunda. We do not like the fir bark material.

**Cattleyas.** We offer blooming size plants in good osmunda fiber for \$5.00. These are in 4" or 5" pots. They are fine species like C. trianae, and a few strays.

**White Cattleyas** are not common. The following are mostly June flowering, for brides but do not pin us down on this as cultural conditions may result in a wide variation in flowering date. **C. Edithiae**, purest white \$8.50. Our selection of other whites, \$6.50.

Potted Cattleyas can only be shipped by Express f.o.b.

**Bletilla hyacintha**. Lovely hardy, terrestrial orchid. Plant before Mar. 1. The best soil contains much sand and peat. 8 to 12 lovely little purple orchids on a scape 15" tall. Price 40c. 3 for \$1.00. \$3.50/doz. postpaid. \$25.00/100 by express, f.o.b.

**Osmundine**, best Florida grade, \$2.00 lb. postpaid.

For scale on orchids, spray with Thrip O cide. See listing under Garden Supplies.

**Laelias** look very much like small Cattleyas. We grow them in 8" to 10" baskets of sphagnum. We can supply a few varieties for \$7.50 ea. f.o.b. express. **Laelia anceps** are \$7.50 up to \$12.50. Plants with flower spikes that will soon bloom can be sent in Feb. and March for \$15.00, f.o.b. express.

**Brassovola Digbyana**. Plant resembles a Laelia. The white flowers have a fringed lip and are used to cross with Cattleyas in order to get fringed lips. We grow in baskets of Sphagnum but others grow in osmundine in pots like Cattleyas. This species is hard to get. Price \$10.00, in 8" wire basket, f.o.b. express.

## MISCELLANEOUS

**Tecolote Ranunculus** and **Anemones**, large size for growing in pots or in the garden. Price, either Ranunculus or Anemones, 2 for 15c. 50c doz.

**Culture**. Hardy only in deep south. It is best to start after summer heat has gone—in mild autumn weather. Don't forget to keep them moist. Transplant to garden in deep south or to pots in north. You can start them or grow them in a cool room in the house in winter. They should have sandy soil with peat added. Heat is their enemy.

**Ctenanthe oppenheimiana**, var. **tricolor**. **Marantaceae**. A beautifully colored foliage plant. The foliage is striped light and dark green on upper surface with a few white stripes and blotches. The under side is maroon. Grow in 5" pots, acid soil—peat or sphagnum with sand. We will ship, out of pot, postpaid, for \$2.00 or in clay pots, by express, f.o.b., for \$1.75.

**Maranta Kerchoveana**. Rabbit Tracks. Nice, easy-to-grow shade plants, for pots. Acid soil. 60c.

**Peperomia**. Watermelon-striped leaves. They make a most attractive small foliage plant along with other small plants like African Violets. Establish in a 4" or 5" pot, acid soil of peat, sand and leaf mould. Shade. 75c, if with other plants, or \$1.00 if alone.

The last three are nice foliage plants. The following are even more colorful.

**Fancy Leaf Caladiums**. Beautiful new sorts. So new that some are not yet named. Our own selection. 30c ea. 4 for \$1.00.

**Fittonia argyroneura**. Lovely creeping plant with shining green leaves veined white. 50c.

**F. verschaffeltii**. Larger, darker green leaves, veined carmine. 90c.

**F. verschaffeltii**, var. **Pearcei**, has broader and more colorful veins. Our botanical reference is not very clear but this is different and more colorful. \$1.50.

**Codlaeum**. Popular name is **Croton**. Shrubs from the Old World tropics. The foliage is very variable and is the most colorful plant that we grow with green, red, white in many combinations. It is easy to grow in pots and no foliage plant collector should do without several. We can supply at least five differently colored Codlaeums for 75c to \$1.00 each, according to size and color quality.

**Pilea involucrea**. Artillery Plant, because it discharges its pollen explosively. Curious and very pretty. 75c.

**Nautocalyx bullatus**. Close relative of *Episcias* and as tender. Upright grower to 1 ft. or more. Quilted leaves of dark bronze-green, maroon on underside. Same soil as for above. A very gorgeous plant. \$1.25.

**Ceropegia.** The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. Plant at once and keep only slightly moist until started. The flowers are very unusual. Prices are for small tubers or cuttings.

**Ceropegia Woodi.** Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. The most desirable species. 50c.

**C. debilis.** Cylindrical leaves. Rapid grower. 35c.

**C. Barkleyi.** The oblong leaves are pointed at the apex. 60c.

## THE PINEAPPLE FAMILY—Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea, and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

**How to Grow Billbergias.** All are tropical, or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of  $\frac{1}{4}$  sand or sandy loam and  $\frac{3}{4}$  peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture of Aechmea and Aregelia** is the same.

**Aechmea calyculata.** Bright green leaves, yellow flowers. \$2.00.

**Billbergia calophylla.** Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

**Billbergia Burkholtzi.** Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

**B. distachia.** Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 75c.

**B. Elvenia Slosson** (Nutans x Alberti). Tall plant with very attractive flowers in spring. It takes a lot of postage and its fine quality makes it cost \$3.00 each.

**B. nutans.** Mid-winter, beautiful inflorescence on small plants. Fine pot plants. 75c.

**B. pyramidalis.** Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

**B. Rubro-cyanea.** Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts. \$1.00.

**B. speciosa.** Green lvs., striped on back. Green fls., tipped blue. Rose bracts. \$2.00.

**B. Theodore L. Meade.** Green lvs. and large, beautiful inflorescence, continuous all year on new growths. \$1.50.

**B. thrysiflora** (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

**B. Zebrina.** Lvs. banded white on back. Salmon bracts, green fls. \$1.50.

**Collection all 12 varieties.** Express f.o.b., \$16.50. By this method we can send larger plants. By mail, postpaid, \$18.25.

**Big 4 Collection.** Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$3.25. Include Special Handling for these plants by mail. If you order them to come by express, f.o.b., we send much larger plants.